Wall Industries, Inc.

Rev. B

LANCW5 Series
Single and Dual Output
5 Watt DC/DC Converter
2:1 and 4:1 Wide Input Voltage

FEATURES

- Five-Sided Shielding
- 5 Watts Output power
- High Efficiency up to 84%
- Standard 1.25 x 0.8 x 0.4 Inches
- Fixed Switching Frequency (300KHz)
- 2:1 and 4:1 Ultra Wide Input Voltage Range
- Compliant to RoHS EU Directive 2002/95/EC
- UL60950-1, EN60950-1, and IEC60950-1 Licensed
- Standard 24 Pin DIP Package and SMT Type Package
- CE Mark meets 2006/95/EC, 93/68/EEC, and 2004/108/EC

APPLICATIONS

- Wireless Network
- Telecom/Datacom
- Industry Control System
- Measurement Equipment
- Semiconductor Equipment



SPECIFICATIONS: *LANCW5 Series*

All specifications apply @ 25°C ambient unless otherwise noted

INPUT SPECIFICATIONS

Input Voltage Range

LANCW5	12V nominal input	9-18Vdc
	24V nominal input	18-36VDC
	48V nominal input	36-75VDC
LANCUW5	24V nominal input	9-36VDC
	48V nominal input	18-75VDC

Input Filter ..... Pi Type

Input Surge Voltage (100ms max) ..... 12V input 36VDC
24V input 50VDC
48V input 100VDC

Input Reflected Ripple Current (nominal Vin and full load) 20mAp-p

Start Up Time (nominal Vin and constant resistive load) ..... 450ms typ.

OUTPUT SPECIFICATIONS

Output Voltage ..... see table

Voltage Accuracy (nominal Vin and full load) ..... ±1%

Output Current ..... see table

Output Power ..... 5 watts max.

Line Regulation (LL to HL at FL) ..... ±0.2%

Load Regulation (no load to full load) ..... Single Output ..... ±0.5%
Dual Output ..... ±1%

Cross Regulation (Dual) (Asymmetrical load 25% / 100% FL) ..... ±5%

Minimum Load 0%

Ripple/Noise (20 MHz BW) 50mVp-p

Temperature Coefficient ..... ±0.02% / °C max.

Transient Response Recovery Time (25% load step) 200us

PROTECTION SPECIFICATIONS

Over Load Protection (% of full load at nominal input) ..... 170% typ.

Short Circuit Protection ..... Continuous, automatic recovery

GENERAL SPECIFICATIONS

Efficiency ..... see table

Switching Frequency ..... 300KHz typ.

Isolation Voltage

Input to Output	1600VDC min.
Input (Output) to Case (DIP)	1600VDC min.
Input (Output) to Case (SMT)	1000VDC min.

GENERAL SPECIFICATIONS (CONTINUED)

Isolation Resistance ..... 10^9 ohms min.

Isolation Capacitance ..... 300pF max.

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature

Standard	-25°C to +85°C (w/ derating)
"I" (See notes 6 & 9)	-40°C to +85°C (w/o derating)
"I" (UW Series)	-40°C to +85°C (w/ derating)

Storage Temperature ..... -55°C ~ +105°C

Maximum Case Temperature ..... Standard ..... +100°C
"I" suffix ..... +105°C

Relative Humidity (non-condensing) ..... 5% to 95% RH

Thermal Impedance (Natural Convection) ..... 20°C / Watt

Thermal Shock MIL-STD-810F

Vibration ..... 10~55Hz, 10G, 30 minutes along X, Y, and Z

MTBF (See Note 1) ..... BELLCORE TR-NWT-000332 ..... 3.165 x 10^6 hrs
MIL-HDBK-217F ..... 1.631 x 10^6 hrs

PHYSICAL SPECIFICATIONS

Weight ..... DIP ..... 16g (0.55 oz)
SMT ..... 18g (0.63 oz)

Dimensions ..... 1.25 x 0.80 x 0.40 inches (31.8 x 20.3 x 10.2 mm)

Case Material ..... Nickel-coated copper

Base Material ..... Non-conductive black plastic

Potting material ..... Epoxy (UL94-V0)

Shielding ..... five – sided

SAFETY & EMC

Approvals and Standards IEC60950-1, UL60950-1, EN60950-1

EMI ..... EN55022 ..... Class A

ESD ..... EN61000-4-2 ..... Air ± 8KV / Contact ± 6KV ..... Perf. Criteria A

Radiated Immunity	EN61000-4-3	10V/m	Perf. Criteria A
Fast Transient	EN61000-4-4	±2KV	Perf. Criteria B
Surge (See Note 7)	EN61000-4-5	±1KV	Perf. Criteria B
Conducted Immunity	EN61000-4-6	10 Vrms	Perf. Criteria A

Due to advances in technology, specifications subject to change without notice

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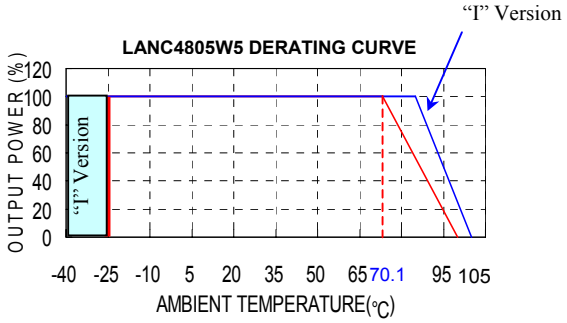
OUTPUT VOLTAGE / CURRENT RATING CHART

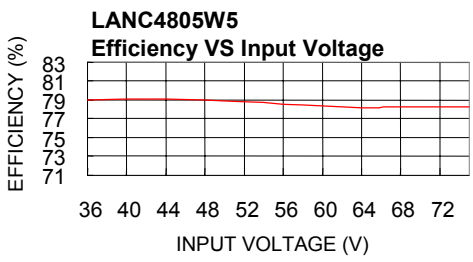
Model Number	Input Range	Output Voltage	Output Current	Ripple & Noise [4]	Input Current		Eff [4] (%)	Capacitor [5] Load max
					No Load [3]	Full Load [2]		
LANC1233W5	9 – 18 VDC	3.3 VDC	1000mA	50mVp-p	10mA	382mA	76	2200uF
LANC1205W5	9 – 18 VDC	5 VDC	1000mA	50mVp-p	10mA	563mA	78	1000uF
LANC1212W5	9 – 18 VDC	12 VDC	470mA	50mVp-p	10mA	603mA	82	220uF
LANC1215W5	9 – 18 VDC	15 VDC	400mA	50mVp-p	10mA	649mA	81	150uF
LANC1205DW5	9 – 18 VDC	±5 VDC	±500mA	50mVp-p	15mA	563mA	78	± 680uF
LANC1212DW5	9 – 18 VDC	±12 VDC	±230mA	50mVp-p	20mA	597mA	81	± 100uF
LANC1215DW5	9 – 18 VDC	±15 VDC	±190mA	50mVp-p	15mA	594mA	84	± 68uF
LANC2433W5 (UW)	18 – 36 (9 – 36) VDC	3.3 VDC	1000mA	50mVp-p	10mA(5mA)	194mA (191mA)	75 (76)	2200uF
LANC2405W5 (UW)	18 – 36 (9 – 36) VDC	5 VDC	1000mA	50mVp-p	15mA(10mA)	285mA (278mA)	77 (79)	1000uF
LANC2406UW5	**9 – 36 VDC**	**6 VDC**	**833mA**	**50mVp-p**	**-**	**278mA**	**79**	**690uF**
LANC2412W5 (UW)	18 – 36 (9 – 36) VDC	12 VDC	470mA	50mVp-p	15mA(5mA)	305mA (305mA)	81 (81)	220uF
LANC2415W5 (UW)	18 – 36 (9 – 36) VDC	15 VDC	400mA	50mVp-p	15mA(10mA)	325mA (312mA)	81 (84)	150uF
LANC2405DW5 (UW)	18 – 36 (9 – 36) VDC	±5 VDC	±500mA	50mVp-p	15mA(10mA)	274mA (282mA)	80 (78)	± 680uF
LANC2412DW5 (UW)	18 – 36 (9 – 36) VDC	±12 VDC	±230mA	50mVp-p	20mA(10mA)	288mA (295mA)	84 (82)	± 100uF
LANC2415DW5 (UW)	18 – 36 (9 – 36) VDC	±15 VDC	±190mA	50mVp-p	20mA(10mA)	308mA (297mA)	81 (84)	± 68uF
LANC24833W5 (UW)	36 – 75 (18 – 75) VDC	3.3 VDC	1000mA	50mVp-p	10mA(5mA)	98mA (100mA)	74 (73)	2200uF
LANC4805W5 (UW)	36 – 75 (18 – 75) VDC	5 VDC	1000mA	50mVp-p	10mA(10mA)	143mA (138mA)	77 (79)	1000uF
LANC4812W5 (UW)	36 – 75 (18 – 75) VDC	12 VDC	470mA	50mVp-p	10mA(10mA)	151mA (155mA)	82 (80)	220uF
LANC4815W5 (UW)	36 – 75 (18 – 75) VDC	15 VDC	400mA	50mVp-p	10mA(10mA)	162mA (160mA)	81 (82)	150uF
LANC4805DW5 (UW)	36 – 75 (18 – 75) VDC	±5 VDC	±500mA	50mVp-p	10mA(10mA)	141mA (145mA)	78 (76)	± 680uF
LANC4812DW5 (UW)	36 – 75 (18 – 75) VDC	±12 VDC	±230mA	50mVp-p	5mA(10mA)	147mA (151mA)	82 (80)	± 100uF
LANC4815DW5 (UW)	36 – 75 (18 – 75) VDC	±15 VDC	±190mA	50mVp-p	10mA(10mA)	150mA (156mA)	83 (80)	± 68uF

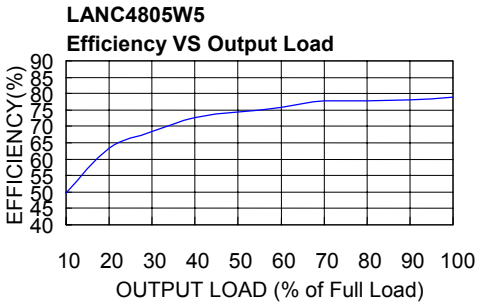
NOTES

1. BELLCORE TR-NWT-000332. Case 1: 50% Stress, Temperature at 40ºC.
   MIL-HDBK-217F Notice2 @ Ta=25°C, Full load (Ground, benign, controlled environment).
2. Maximum value at nominal input voltage and full load of standard type.
3. Typical value at nominal input voltage and no load.
4. Typical value at nominal input voltage and full load.
5. Test by minimum Vin and constant resistive load.
6. The industrial I suffix for 2:1 version is more efficient, therefore, it can be operated in a more extensive temperature range than standard and I suffix 4:1 input versions.
7. An external filter capacitor is required if the module has to meet EN61000-4-5. The filter capacitor Wall Industries suggests: Nippon chemi-com KY Series, 220µF/100V, ESR 48mΩ.
8. There is no pin at PIN10 & PIN15 for LANC5UW Series.
9. For industrial temperature range add “I” suffix to the part number.
10. For SMT Type add “S” suffix to the part number.

DERATING CURVE & EFFICIENCY GRAPHS

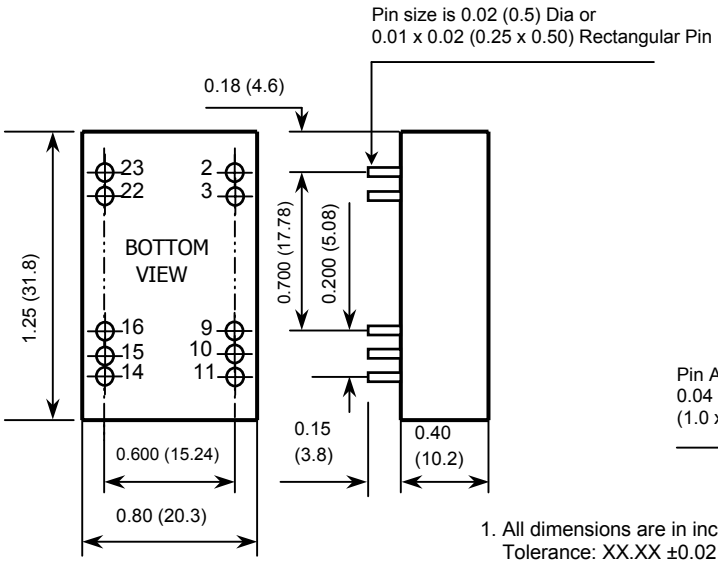






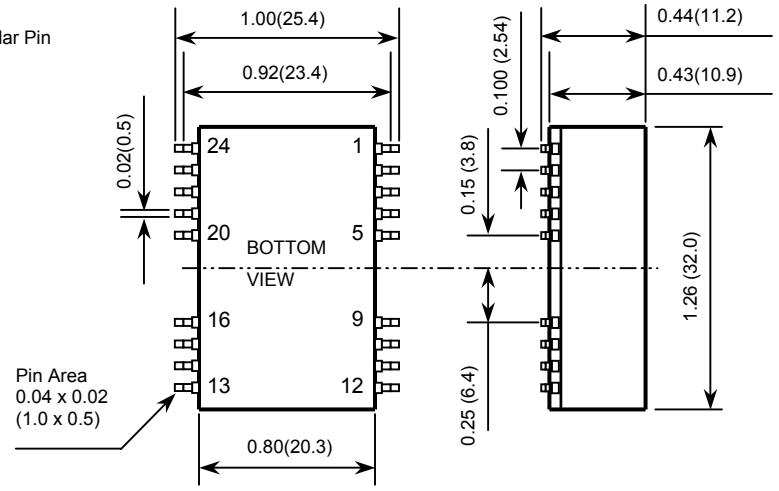
MECHANICAL DRAWING

DIP TYPE



SMT TYPE

(add suffix "S")



1. All dimensions are in inches (mm)
   Tolerance: XX.XX ±0.02 (X.X±0.5)
   XX.XXX±0.01 (X.XX±0.25)
2. Pin pitch tolerance ±0.01 (0.25)
3. Pin dimension tolerance ±0.004 (0.1)

(DIP) PIN CONNECTION					
PIN	**SINGLE**	**DUAL**	**PIN**	**SINGLE**	**DUAL**
2	-INPUT	-INPUT	23	+INPUT	+INPUT
3	-INPUT	-INPUT	22	+INPUT	+INPUT
9	NC	COMMON	16	-OUTPUT	COMMON
10	NC (Note 8)	NC (Note 8)	15	NC (Note 8)	NC (Note 8)
11	NC	-OUTPUT	14	+OUTPUT	+OUTPUT

(SMT) PIN CONNECTION					
PIN	**SINGLE**	**DUAL**	**PIN**	**SINGLE**	**DUAL**
2	-INPUT	-INPUT	23	+INPUT	+INPUT
3	-INPUT	-INPUT	22	+INPUT	+INPUT
9	NC	COMMON	16	-OUTPUT	COMMON
10	NC	NC	15	NC	NC
11	NC	-OUTPUT	14	+OUTPUT	+OUTPUT
Others	NC	NC	Others	NC	NC